

Claims

- [c1] A vacuum cleaner comprising:
- a foot assembly having a suction nozzle and adapted to move along a surface to be cleaned;
 - an upright handle assembly pivotally mounted to said foot assembly for manipulation of the foot assembly along the surface to be cleaned and including:
 - a module platform pivotally mounted to the foot assembly;
 - an elongated structural support rigidly mounted at a lower portion to the module platform and forming a handle grip at an upper portion;
 - a portable cleaning module detachably mounted as a unit to the module platform and comprising:
 - a module housing;
 - a dirt separator mounted in the module housing for separating dust and dirt from dirt laden air;
 - a suction conduit having a first end connected to the module housing in fluid communication with the dirt separator and removable coupling at a second end; and
 - a motor-driven fan supported in the module housing for creating suction within the suction conduit and for moving the dirt laden air through the dirt separator; and

a working air conduit connected at one end to the suction nozzle in the foot assembly and is removably connected at another end to the suction conduit removable coupling;

whereby when the portable cleaning module is mounted on the module platform, the vacuum cleaner functions as an upright vacuum cleaner and the motor-driven fan draws dirt laden air from the suction nozzle in the foot assembly to the suction conduit and moves the dirt laden air to the dirt separator, and wherein when the portable cleaning module is removed from the module platform, the vacuum cleaner can function as portable vacuum cleaner and the motor-driven fan draws dirt laden air from the second end of the suction conduit and moves the dirt laden air to the dirt separator;

the improvement which comprises:

the dirt separator includes a cyclone separation chamber into which the dirt laden air is tangentially introduced through an inlet thereto.

- [c2] A vacuum cleaner according to claim 1 wherein the elongated structural support comprises a pair of spaced elongated frames that are joined at an upper portions thereof and the portable cleaning module is positioned between the spaced elongated frames when it is mounted on the module platform.

- [c3] A vacuum cleaner according to claim 2 wherein the spaced elongated frames form a handle grip at an upper portion thereof.
- [c4] A vacuum cleaner according to claim 3 wherein the spaced elongated frames are tubes.
- [c5] A vacuum cleaner according to claim 4 wherein the suction conduit is at least in part flexible for movement of the second end thereof with respect to the module housing during use of the portable cleaning module when it is detached from the module platform.
- [c6] A vacuum cleaner according to claim 5 wherein the cyclonic separation chamber has an outlet and the motor driven fan has an inlet connected to the cyclone separator chamber outlet.
- [c7] A vacuum cleaner according to claim 5 wherein the motor driven fan has an inlet connected to the first end of the suction conduit and an outlet connected to the cyclone separator chamber inlet.
- [c8] A vacuum cleaner according to claim 6 wherein the dirt separator further includes a dirt cup removably mounted in the module housing beneath the cyclone separator to collect dirt separated from air therein.

- [c9] A vacuum cleaner according to claim 8 wherein the module housing further includes a handle integrally formed at an upper portion thereof.
- [c10] A vacuum cleaner according to claim 1 wherein the elongated structural support comprises a pair of spaced tubes and the portable cleaning module is positioned between the spaced tubes when it is mounted on the module platform.
- [c11] A vacuum cleaner according to claim 1 wherein the suction conduit is at least in part flexible for movement of the second end thereof with respect to the module housing during use of the portable cleaning module when it is detached from the module platform.
- [c12] A vacuum cleaner according to claim 1 wherein the cyclonic separation chamber has an outlet and the motor driven fan has an inlet connected to the cyclone separator chamber outlet.
- [c13] A vacuum cleaner according to claim 1 wherein the motor driven fan has an inlet connected to the first end of the suction conduit and an outlet connected to the cyclone separator chamber inlet.
- [c14] A vacuum cleaner according to claim 1 wherein the dirt

separator further includes a dirt cup removably mounted in the module housing beneath the cyclone separator to collect dirt separated from air therein.

[c15] A vacuum cleaner according to claim 1 wherein the module housing further includes a handle integrally formed at an upper portion thereof.

[c16] A vacuum cleaner according to claim 1 wherein the module platform includes an opening at an upper surface thereof, the opening forms the other end of the working air conduit and the suction conduit second end is removably coupled to the opening.

[c17] A vacuum cleaner according to claim 1 wherein the module housing further includes a handle for hand carrying the module.

[c18] A vacuum cleaner according to claim 17 wherein the handle is at an upper portion of the portable cleaning module.